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CHANKONG, DOHM

ART UNIT	PAPER NUMBER
2152	

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Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/886,373	STARK ET AL.
	Examiner	Art Unit	
	Dohm Chankong	2152	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 February 2005</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,5-11,13,16-18,21-26,31,36-39 and 41-80* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,5-11,13,16-18,21-26,31,36-39 and 41-80* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1> This action is in response to Applicant's amendment and remarks. Claims 2, 4, 12, 13,

15, 19, 20, 27-30, 32-35, 40 and 81-95 have been cancelled. Claims 1, 3, 5-11, 13, 16-18, 21-26, 31, 36-39

and 41-80 are presented for further examination.

Response to Arguments

2> Applicant's arguments with respect to claims 1, 3, 5-11, 13, 16-18, 21-26, 31, 36-39, 41-46

and 52-80 have been considered but are moot in view of the new ground(s) of rejection

necessitated by Applicant's amendment that have altered the scope of the claims:

a. Claims 1 and 14 are further limited as now including coordinating transitional

functions regarding the centralized system service;

b. Claim 31 has been further limited to include a cluster membership monitor for

managing a cluster;

c. Claims 38, 41, 52, 56, 61, 65, 67, 69, 71, and 79 are now incorporated into claim 31.

3> In regards to claim 14, Applicant asserts that Sreenivasan does not disclose a node

with two levels in which a system service and a coordinator reside. Examiner respectfully

disagrees. Sreenivasan discloses his coordinator and system service residing on separate

layers; the GCS (group communication services) communicates with a CMS (cluster

membership service) layer [0070, 0232]. Examiner interprets the GCS and CMS being on

separate levels, and that GCS and CMS represent the coordinator and system services

respectively.

Applicant also argues that Sreenivasan is silent to using a transitional function including transition to an appropriate availability state. Examiner believes that this is inaccurate as well; Sreenivasan discloses transitioning leadership responsibilities between nodes [0137, 0138]. Barring any further limitations on "an appropriate availability state", Examiner interprets Sreenivasan's leadership state as the claimed "appropriate" availability state.

4>   Although Applicant did not specifically address the rejection of claims 47-51, Examiner would like to note that the rejection for claims 47-51 are maintained. Sreenivasan discloses using callback functions to trigger initialization levels at said plurality of nodes [0027, 0086 where : Sreenivasan's membership event is analogous to a callback function as it trigger's initialization of the new nodes]. Since Sreenivasan discloses utilizing callbacks, their registration within his systems services coordinator is inherent to the design; that is, if they were not registered, then his callbacks would be able to be utilized and would not be able to trigger initialization at the nodes. Therefore, the rejections of claims 47-51 are maintained.

Claim Rejections - 35 USC § 112

5>   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6>   Claim 39 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention.

     d.   Claim 39 is rejected for lacking proper antecedent basis: "said system service

server".

Claim Rejections - 35 USC § 103

7>   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8>   Claims 1, 5-11, 13, 17, 21-26, 31, 36-39 and 41-80 are rejected under 35 U.S.C § 103(a) as

being unpatentable over Sreenivasan et al, U.S Patent Pub 2002|0049845 ["Sreenivasan"], in

view of Franckowiak et al, U.S Patent Pub 2003|0005356 ["Franckowiak"].

9>   As to claim 1, Sreenivasan discloses a network having a plurality of nodes for

exchanging information [abstract], comprising:

     a master node within said plurality of nodes, said master node including a primary

server to run a centralized system service comprising a cluster membership monitor running

to manage membership of a set of the plurality of nodes in a cluster[Figure 1 «items 12, 32, 34»

| paragraphs 0015, 0037, 0078, 0079, 0081, 0083];

a vice node within the plurality of nodes, the vice node including a secondary server

to run the centralized system service when the master nodes is unable or unavailable to run

the centralized system service [paragraphs 0015, 0026, 0027, 0063]; and

a system services coordinator on each of said plurality of nodes to coordinate a

function defining an operational transition in the cluster and regarding said centralized

system service [paragraph 0079, 0082, 0137, 0138 : the membership server is analogous to a

systems services coordinator].

While Sreenivasan discloses utilizing callback actions [0134 : where Sreenivasan

discloses actions (elect, compute, distribute, remove nodes, etc) to coordinate the transition

to find a new leader within the cluster], he does not explicitly disclose registering callback

actions with said system services coordinator and wherein said system services coordinator

processes the registers callback actions for said centralized system service as part of the

function coordinated by the system services coordinator.

10>   Franckowiak discloses a data replication service that is similar to Sreenivasan's high

availability system using replicas. Since Sreenivasan discloses utilizing callback actions

(initialize, remove nodes, etc), the registration of these callback actions is inherent in

Sreenivasan's system (otherwise, the nodes would not be able to call them). Further,

Franckowiak discloses registering callback actions with said system services coordinator and

wherein said system services coordinator processes the registers callback actions for said

centralized system service as part of the function coordinated by the system services

coordinator [Figure 6 «item 82» | 0002, 0029, 0053]. It would have been obvious to one of

ordinary skill in the art to incorporate Franckowiak's registration of callback actions into Sreenivasan's system to properly initialize Sreenivasan's coordinator and enable access to the callback actions.

11>   As to claim 5, Sreenivasan discloses the network of claim 1, wherein said function is an initialization function [paragraphs 0086, 0097].

12>   As to claim 6, Sreenivasan does not explicitly disclose the network wherein said function comprises a shut down function, but does disclose a function for resetting and removing a node from the membership [paragraph 0241 and 0243 where: the CMS can force a reset of a node, the "reset" functionality comparable to a shut down function]. However, it would have been obvious to one of ordinary skill in the art to have reasonably inferred that Sreenivasan's reset and node removal functionality is comparable to a shutdown function.

13>   As to claim 7, Sreenivasan does not explicitly disclose the network wherein said function comprises a promote function but does disclose a function whereby a backup node is promoted after a primary node fails [paragraphs 0015, 0073]. It would have been obvious for one of ordinary skill in the art to have reasonably inferred that Sreenivasan's method of assigning a backup node to be the new primary as equivalent to a promote function.

14>   As to claim 8, Sreenivasan does not explicitly disclose the network wherein said function comprises a demote function but does disclose a function that promotes a backup

node over a failed primary node [paragraph 0063]. It would have been obvious for one of ordinary skill in the art to have reasonably inferred that Sreenivasan's method of removing a failed primary node by assigning a backup as the new primary is comparable in functionality to a demote function (for the failed primary node).

15>   As to claim 9, Sreenivasan does not explicitly disclose the network wherein said function comprises a disqualify function but does disclose a function that checks a flag before allowing a node to join the cluster (where the setting of the flag to false disqualifies the node) [paragraphs 0222, 0226]. It would have been obvious for one of ordinary skill in the art to have reasonably inferred that Sreenivasan's flag functionality is comparable to a disqualify function.

16>   As to claim 10, Sreenivasan does not explicitly disclose the network wherein said function comprises a qualify function but does disclose a function that checks a flag before allowing a node to join the cluster (where the setting of the flag to true qualifies the node) [paragraphs 0220, 0226]. It would have been obvious for one of ordinary skill in the art to have reasonably inferred that Sreenivasan's flag functionality is comparable to a disqualify function.

17>   As to claim 11, Sreenivasan discloses the network of claim 1, wherein said plurality of nodes includes a master-eligible node [paragraph 0063].

18>   As to claim 14, Sreenivasan discloses a node within a network of nodes for exchanging

information, comprising:

a centralized system service to run on a primary server on the node, the centralized

system service comprising a mechanism for monitoring membership of a set of the network

nodes in a cluster providing a distributed application environment [abstract | paragraphs

0063, 0073, 0078, 0079, 0082];

a system services coordinator to coordinate a transitional function regarding said

centralized system service [paragraphs 0082, 0137, 0138]; and

a high availability level and an operating system level, wherein said system service

coordinator resides in said high availability level and wherein said centralized system service

at least partially resides in the operating system level [0070, 0232 where : Sreenivasan

discloses a coordinator and system service residing on separate layers of the node].

wherein said transitional function includes a callback sequence used by the system

services coordinator in performance of the transitional function including transition to an

appropriate availability state [0134, 0135, 0136, 0137, 0138].

19>   As to claim 17, Sreenivasan does not specifically disclose a component role assignment

manager, but does disclose a cluster membership daemon (CMD) that provides component

role assignment [paragraphs 0109, 0142 where the CMD has functionality to determine which

node is the leader of the cluster]. It would have been obvious for one of ordinary skill in the

art to have reasonably inferred that Sreenivasan's CMD is analogous to the claimed

component role assignment manager as they have comparable functionality.

20>   As to claims 21-26, as they are merely nodes that implement the same functionality of

the network of claims 5-10, respectively, it does not teach or further define over the claimed

limitations. Therefore, claims 21-26 are rejected for the same reasons set forth in claims 5-10,

supra.

21>   As to claim 31, Sreenivasan discloses a method for coordinating a system service

within a network having a plurality of nodes, the system service comprising a cluster

membership monitor for managing a cluster including a set of the plurality of nodes [Figure 1

«items 12, 32, 34» | paragraphs 0079, 0081, 0083], comprising:

        receiving a request at a system services coordinator on a master node, said system

services coordinator having a component at each of said plurality of nodes in the cluster

[paragraphs 0079 0085, 0097];

        using said callback sequence for performing a function at one of said plurality of

nodes in response to said request, wherein said using includes invoking callback functions

having levels, said levels correlating to completing stages of said callback functions [0085,

0086, 0087, 0088, 0182];

        reacting to said function by said system services coordinator on said node and

communicating said reaction to said system services coordinator [paragraphs 0082, 0088,

0089, 0097, 0156];

        receiving said levels at said system services coordinator as said stages are completed

[0085, 0143].

While Sreenivasan discloses using commands for performing a function at one of said plurality of nodes in response to said request [paragraphs 0032, 0112, 0116] but does not specifically disclose using a callback sequence. However, it would have been obvious for one of ordinary skill in the art to have reasonably inferred that Sreenivasan's messaging and command functionality would be analogous to a callback sequence as they have comparable functionality.

While Sreenivasan discloses utilizing callback actions [0134 : where Sreenivasan discloses actions (elect, compute, distribute, remove nodes, etc) to coordinate the transition to find a new leader within the cluster], he does not explicitly disclose registering callback actions with said system services coordinator and wherein said system services coordinator processes the registers callback actions for said centralized system service as part of the function coordinated by the system services coordinator.

22>   Franckowiak discloses a data replication service that is similar to Sreenivasan's high availability system using replicas. Since Sreenivasan discloses utilizing callback actions (initialize, remove nodes, etc), the registration of these callback actions is inherent in Sreenivasan's system (otherwise, the nodes would not be able to call them). Further, Franckowiak discloses registering callback actions with said system services coordinator and wherein said system services coordinator processes the registers callback actions for said centralized system service as part of the function coordinated by the system services coordinator [Figure 6 «item 82» | 0002, 0029, 0053]. It would have been obvious to one of ordinary skill in the art to incorporate Franckowiak's registration of callback actions into

Sreenivasan's system to properly initialize Sreenivasan's coordinator and enable access to the

callback actions.

23>   As to claim 36, Sreenivasan discloses the method of claim 31, further comprising

transitioning said system services according to said callback sequence [paragraphs 0085, 0086,

0087, 0088, 0092, 0137, 0138, 0143].

24>   As to claim 37, Sreenivasan discloses the method of claim 31, further comprising

interfacing said system services with said plurality of nodes [abstract | Figure 1 | paragraph

0079].

25>   As to claim 38, Sreenivasan discloses the method of claim 31, further comprising:

        determining phases of said command sequence, said phases correlating to stages of

completing said function [paragraphs 0032, 0085, 0086, 0087, 0088 where: said function is

membership servicing];

        receiving said phases at said system services coordinator [paragraphs 0085, 0097]; and

        publishing events from said node by said system services coordinator correlating to

said received phases [paragraphs 0237, 0238, 0239, 0240, 241].

26>   As to claim 39, Sreenivasan disclose the method of claim 38, further communicating

said levels to said system service server [paragraphs 0238, 0239].

27>   As to claim 41, Sreenivasan discloses the method of claim 31, further comprising

initializing a node in the cluster, the initializing comprising:

registering said system service on said node with one of the components of the system

services coordinator [paragraphs 0078, 0079, `0083, 0084 where: membership server is

analogous to system services coordinator, and set of interfaces comparable to callback

sequence];

triggering an initializing function having levels [paragraphs 0139, 0168]; and

receiving notification at said system services coordinator for completing said levels

[paragraph 0139].

28>   As to claim 42, Sreenivasan discloses the method of claim 41, further comprising

retrieving boot parameters for said node [paragraph 0061 where: the state of the failed server

is analogous to boot parameters as the state is used to initialize the backup node].

29>   As to claim 43, Sreenivasan discloses the method of claim 41, further comprising

starting up an operating system on said node [paragraphs 0027 and 0037].

30>   As to claim 44, Sreenivasan discloses the method of claim 41, further comprising

loading a configuration table of said network [paragraph 0149, 0155 where: Sreenivasan's GCS

function keeps the nodes of the network up to date with the configuration of said network

which is analogous in functionality to the claimed configuration table].

31>   As to claim 45, Sreenivasan discloses the method of claim 41, further comprising

participating in formation protocol for said network by sending information about said node

[paragraphs 0110, 0152, 0155].

32>   As to claim 46, Sreenivasan discloses the method of claim 41, comprising initializing

non-centralized system services on said node by registering said non-centralized system

services with said system services coordinator [paragraphs 0079, 0263].

33>   As to claim 52, Sreenivasan discloses the method of claim 31, further comprising

switching over the master node having primary servers for the centralized system services,

comprising:

        informing the system services coordinator on said master node of a loss of master

eligibility on said master node [paragraphs 0063, 0073];

        invoking switchover callbacks registered at said system services coordinator

[paragraphs 0063, 0073 where: Sreenivasan's commands are analogous to the callbacks]; and

        transferring states of said primary servers to secondary servers for said centralized

system services at a vice node [paragraphs 0017, 0063].

34>   As to claim 53, Sreenivasan discloses the method of claim 52, further comprising

updating said plurality of nodes on said transferred states via said system services

coordinator [paragraph 0097, 0134].

35>   As to claim 54, Sreenivasan discloses the method of claim 52, further comprising

updating non-centralized system services via said system services coordinator [paragraphs

0249, 0250, 0251, 0261].

36>   As to claim 55, Sreenivasan discloses the method of claim 52, further comprising

triggering a switchover condition on said master node [abstract | paragraph 0017].

37>   As to claim 56, Sreenivasan discloses the method of claim 31, further comprising

failing the master node having primary servers for the centralized system services, the failing

comprising:

claiming mastership of said network at a vice node and informing said centralized

system services via the system services coordinator [paragraphs 0026, 0061, 0063, 0262, 0263];

and

recovering states of said primary servers on said master node to secondary servers of

said centralized system services on said vice node [paragraph 0017, 0022].

38>   As to claim 57, Sreenivasan discloses the method of claim 56, further comprising

detecting that said primary servers have been transferred [abstract | paragraph 0026].

39>   As to claim 58, Sreenivasan discloses the method of claim 56, further comprising

synchronizing a reconnection to said centralized system services at said plurality of nodes via

said system services coordinator [paragraph 0248].

40>   As to claim 59, Sreenivasan discloses the method of claim 56, further comprising

detecting a failover condition at said master node [paragraphs 0017, 0026].

41>   As to claim 60, Sreenivasan discloses the method of claim 56, further comprising

electing another vice node [paragraphs 0020, 0065].

42>   As to claim 61, Sreenivasan discloses the method of claim 31, further comprising

demoting a master eligible node among the set of the nodes in the cluster within the network,

the demoting comprising:

        initiating a demote callback sequence from the system services coordinator [paragraph

0063 where: removing a failed primary node by assigning a backup as the new primary is

comparable in functionality to a demote function (for the failed primary node).];

        transitioning centralized system services servers on said master-eligible node to a

spare state [paragraph 0061, 0238]; and

        updating said system services coordinator [paragraph 0169, 0173, 0181].

43>   As to claim 62, Sreenivasan discloses the method of claim 61, further comprising

triggering a switchover condition on said master-eligible node [abstract | paragraphs 0017,

0026].

44>   As to claim 63, Sreenivasan discloses the method of claim 61, further comprising

detecting a failover condition on said master-eligible node [paragraphs 0017, 0026].

45>   As to claim 64, Sreenivasan discloses the method of claim 61, further comprising

notifying said system services coordinator that said master-eligible node is to be demoted

[paragraphs 0073, 0209].

46>   As to claim 65, Sreenivasan discloses the method of claim 31 further comprising

promoting a node in the set of nodes to be master eligible, the promoting comprising:

        initiating a promote callback sequence from the system services coordinator

[paragraphs 0015, 0073 where: it would have been obvious for one of ordinary skill in the art

to have reasonably inferred that Sreenivasan's method of assigning a backup node to be the

new primary as equivalent to a promote function];

        transitioning centralized system services servers on said promoted node to an

availability state [paragraph 0061, 0238]; and

        updating said system services coordinator [paragraph 0169, 0173, 0181].

47>   As to claim 66, Sreenivasan discloses the method of claim 65, further comprising

notifying said system services coordinator that said promoted node is to be promoted

[paragraphs 0073, 0074, 0076, 0250].

48>   As to claim 67, Sreenivasan discloses the method of claim 31, further comprising

disqualifying a node in the cluster from being master eligible within a network for

exchanging information, the disqualifying comprising:

initiating a disqualify callback sequence from a system services coordinator

[paragraphs 0222, 0226, 0246 where: Sreenivasan's function checks a flag before allowing a

node to join the cluster (where the setting of the flag to false disqualifies the node)];

setting a master eligible attribute at said node [paragraphs 0222, 0226];

transitioning centralized system servers on said node to an offline state [paragraph

0061, 0238, 0246].

49>   As to claim 68, Sreenivasan discloses the method of claim 66, further comprising

notifying said system services coordinator that said promoted node is to be disqualified

[paragraphs 0073, 0074, 0076, 0250].

50>   As to claim 69, Sreenivasan discloses the method of claim 31 further comprising

qualifying a node in the cluster to be master eligible, the qualifying comprising:

initiating a qualify callback sequence from the system services coordinator

[paragraphs 0220, 0226 where: a function that checks a flag before allowing a node to join the

cluster (where the setting of the flag to true qualifies the node)];

setting a master eligible attribute at said qualified node [paragraphs 0222, 0226];

transitioning centralized system servers on said qualified node to a spare state

[paragraph 0061, 0238].

51>   As to claim 70, Sreenivasan discloses the method of claim 69 further comprising

notifying said system services coordinator that said qualified node is to be promoted

[paragraphs 0073, 0074, 0076, 0250].

52>   As to claim 71, Sreenivasan discloses the method of claim 31, further comprising

shutting down a node in the cluster, the shutting down comprising:

    invoking callbacks of centralized system services on said shutdown node by a system

services coordinator [paragraphs 0079, 0081, 0083];

    requesting said shutdown node to be removed from said network by said system

services coordinator [paragraph 0076, 0246]; and

    terminating said system services coordinator [paragraph 0135].

53>   As to claim 72, Sreenivasan discloses the method of claim 71, further comprising

terminating said centralized system services when all messages and commands are received

at said system services coordinator [paragraph 0139 where: Sreenivasan's commands are

analogous to callbacks].

54>   As to claim 73, Sreenivasan discloses the method of claim 71, further comprising

shutting down said operating system at said shutdown node [paragraph 0037, 0151].

55> As to claim 74, Sreenivasan discloses the method of claim 71 wherein said node is the master node within said network [paragraphs 0027, 0063, 0079].

56> As to claim 75, Sreenivasan discloses the method of claim 74 further comprising initiating a switchover on said master node [abstract | paragraph 0017].

57> As to claim 76, Sreenivasan discloses the method of claim 71, wherein said shutdown node is a vice node within said network [paragraphs 0015, 0063 where: Sreenivasan's N2 (backup) has equivalent functionality to the claimed vice node].

58> As to claim 77, Sreenivasan discloses the method of claim 76, further comprising initializing another vice node [paragraph 0020 where: there are several backup copies to the primary node that are analogous to a vice node].

59> As to claim 78, Sreenivasan discloses the method of claim 71, further comprising rebooting said shutdown node [paragraph 0063].

60> As to claim 79, Sreenivasan discloses a method of claim 31 for removing a node from the cluster, the removing comprising:

initiating a shutdown callback sequence from the system services coordinator, wherein

said shutdown callback sequence includes levels [paragraphs 0085, 0241, 0243 where: the CMS

can force a reset of a node, the "reset" functionality comparable to a shut down function and

his phases are comparable to levels];

notifying said system services as said levels are completed and terminating

centralized system services on said removed node [paragraphs 0085, 0089, 0110, 0134, 0135,

0151]; and

terminating said system service coordinator [paragraph 0135].

61>   As to claim 80, Sreenivasan discloses the method of claim 79, further comprising

requesting said removed node to be deleted from said cluster [paragraph 0263].

62>   Claims 3 and 18 are rejected under 35 U.S.C § 103(a) as being unpatentable over

Sreenivasan in view of Sun et al, U.S Patent Publication No. 2002/0152373 A1 ["Sun"].

63>   As to claim 3, Sreenivasan does not specifically disclose a network wherein said

master node communicates via a carrier grade transport protocol.

64>   Sun discloses a network wherein nodes communicate via a carrier grade transport

protocol [paragraphs 0060 and 0071] for the obtained advantage of creating a more robust and

manageable system. It would have been obvious to one of ordinary skill in the art to

incorporate carrier grade transport protocol into Sreenivasan's system to take advantage of

the benefits provided by protocol as taught by Sun such as simplifying the provisioning,

configuration and management of network services.

65> As to claim 18, as it is merely is a node that implements the same functionality of the

network of claim 3, it does not teach or further define over the limitations of claim 3.

Therefore, claim 14 is rejected for the same reasons set forth in claim 3, supra.

66> Claim 16 is rejected under 35 U.S.C § 103(a) as being unpatentable over Sreenivasan, in

view of McCanne et al, U.S Patent No. 6.415.323 ["McCanne"].

67> As to claim 16, Sreenivasan does not explicitly disclose a node wherein said

centralized system service comprises a naming service.

68> McCanne does disclose a node within a network of nodes with a centralized system

service comprising a naming service [column 4 «lines 59-63» | column 9 «lines 28-47»]. It

would have been obvious to one of ordinary skill in the art to incorporate McCanne's naming

service into Sreenivasan's node to allow services within his network to be more easily

accessed by a published name.

69> Claims 1 and 5-11 are rejected under 35 U.S.C §103(a) as being unpatentable over

O'Brien et al, U.S Patent Publication No. 2005|00714470 ["O'Brien"] in view of Franckowiak.

70>   As to claim 1, O'Brien discloses a network having a plurality of nodes running

services that collaborate to provide a distributed environment for one or more applications,

comprising:

a master node within said plurality of nodes, said master node including a primary

server to run a centralized system service comprising a cluster membership monitor running

to manage membership of a set of the plurality of nodes in a cluster [0122, 0123, 0126];

a vice node within the plurality of nodes, the vice node including a secondary server

to run the centralized system service when the master node is unable or unavailable to run

the centralized system service [0165, 0168]; and

a system services coordinator on each of said plurality of nodes in the cluster to

coordinate a function defining an operational transition in the cluster and regarding said

centralized system service [0128, 0129].

O'Brien does not explicitly disclose registering callback actions with said system

services coordinator and wherein said system services coordinator processes the registers

callback actions for said centralized system service as part of the function coordinated by the

system services coordinator.

71>   Franckowiak discloses a data replication service that is similar to O'Brien's high

availability system using replicas. Since O'Brien discloses a registration service utilizing

callback actions [0410]. Further, Franckowiak discloses registering callback actions with said

system services coordinator and wherein said system services coordinator processes the

registers callback actions for said centralized system service as part of the function

coordinated by the system services coordinator [Figure 6 «item 82» | 0002, 0029, 0053]. It would have been obvious to one of ordinary skill in the art to incorporate Franckowiak's registration of callback actions into O'Brien's system to properly initialize O'Brien's coordinator and enable access to the callback actions.

72>   As to claim 5, O'Brien discloses the network of claim 1, wherein said function is an initialization function [0178].

73>   As to claim 6, O'Brien discloses the network wherein said function comprises a shut down function [0288].

74>   As to claim 7, O'Brien discloses the network wherein said function comprises a promote function [0286].

75>   As to claim 8, O'Brien disclose the network wherein said function comprises a demote function [0287].

76>   As to claim 9, O'Brien discloses the network wherein said function comprises a disqualify function [0168 where O'Brien checks the node's app.xml file. if the preferred role of the node is not located in the file, then the node is disqualified from being selected as a master].

77>   As to claim 10, O'Brien discloses the network wherein said function comprises a

qualify function [0168 where if the node's app.xml file is set properly, the node is qualified to

be selected].

78>   As to claim 11, Sreenivasan discloses the network of claim 1, wherein said plurality of

nodes includes a master-eligible node [0168, 0171].

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the

advisory action. In no event, however, will the statutory period for reply expire later than

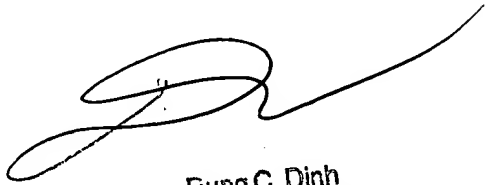SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dohm Chankong whose telephone number is (571)272-3942. The examiner can normally be reached on 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess can be reached on (571)272-3949. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DC

Dung C. Dinh
Primary Examiner